

AMENDED IN ASSEMBLY AUGUST 24, 2012

AMENDED IN ASSEMBLY AUGUST 20, 2012

AMENDED IN ASSEMBLY AUGUST 7, 2012

AMENDED IN ASSEMBLY JUNE 19, 2012

AMENDED IN SENATE APRIL 16, 2012

AMENDED IN SENATE APRIL 9, 2012

## SENATE BILL

**No. 1298**

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### Introduced by Senator Padilla

February 23, 2012

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An act to add Division 16.6 (commencing with Section 38750) to the Vehicle Code, relating to vehicles.

#### LEGISLATIVE COUNSEL'S DIGEST

SB 1298, as amended, Padilla. Vehicles: autonomous vehicles: safety and performance requirements.

Existing law requires the Department of the California Highway Patrol to adopt rules and regulations that are designed to promote the safe operation of specific vehicles, including, among other things, schoolbuses and commercial motor vehicles. Existing law also requires the Department of Motor Vehicles to register vehicles that are being operated in this state and to issue a license plate to an applicant for the operation and identification of that person's vehicle.

This bill would authorize the operation of an autonomous vehicle, as defined, on public roads *for testing purposes*, by a driver who possesses the proper class of license for the type of vehicle being operated, ~~or without the presence of a driver inside the vehicle, if an application is~~

~~submitted to the Department of Motor Vehicles and specified conditions requirements are met, including that the driver be seated in the driver's seat, monitoring the safe operation of the autonomous vehicle, and capable of taking over immediate manual control of the autonomous vehicle in the event of an autonomous technology failure or other emergency. The bill would prohibit, except as provided for testing purposes, the operation of such a vehicle on public roads until the manufacturer submits an application to the department that includes various certifications, including a certification that the autonomous technology satisfies certain requirements, and the application is approved by the department pursuant to the regulations that the department would be required to adopt. The department would be authorized to charge a fee for the application in an amount necessary to recover all costs reasonably incurred by the department. In cases in which the autonomous vehicle is to be operated on public roads for testing purposes, the bill would require, among other things, that the driver be seated in the driver's seat, monitoring the safe operation of the autonomous vehicle, and capable of taking over immediate manual control of the autonomous vehicle in the event of an autonomous technology failure or other emergency. To otherwise operate an autonomous vehicle on public roads, the bill would require the manufacturer of the autonomous technology to provide an autonomous vehicle that satisfies specific criteria. If there is no person in the driver's seat, the operator is the person who causes the autonomous technology to engage in the vehicle, and the bill would authorize the department to impose additional requirements it deems necessary to ensure the safe operation of that vehicle. The bill would require that one of the certifications to specify that the autonomous vehicle's technology meets Federal Motor Vehicle Safety Standards for the vehicle's model year and all other applicable safety standards and performance requirements set forth in state and federal law and the regulations promulgated pursuant to those laws.~~

~~The bill would require, prior to January 1, 2014, that the Department of Motor Vehicles adopt regulations as soon as practicable, but no later than January 1, 2015, setting forth requirements for the submission and of evidence of insurance, surety bond, or self-insurance required by the bill and requirements for the submission or approval of an application to operate an autonomous vehicle, including any testing, equipment, or performance standards, as specified, and to hold public hearings on the adoption of any regulation applicable to the operation of an autonomous~~

vehicle without the presence of a driver inside the vehicle. The bill would provide that federal regulations promulgated by the National Highway Traffic Safety Administration supersede state law or regulation when found to be in conflict. ~~The~~

*The bill would require the department to approve an application submitted by a manufacturer upon making specified findings and would authorize the department to impose additional requirements if the application seeks approval for autonomous vehicles where there is no person in the driver's seat. The bill would also require the department to notify the Legislature of the receipt of an application from a manufacturer seeking approval to operate an autonomous vehicle capable of operating without the presence of a driver inside the vehicle and the approval of the application. The bill would provide that approval of the application is effective no sooner than 180 days after the date the application is submitted.*

*The department would be authorized to charge a fee for the application in an amount necessary to recover all costs reasonably incurred by the department.*

Vote: majority. Appropriation: no. Fiscal committee: yes.  
State-mandated local program: no.

*The people of the State of California do enact as follows:*

- 1 SECTION 1. The Legislature finds and declares all of the
- 2 following:
- 3 (a) Development is actively under way of new technology that,
- 4 through the use of computers, sensors, and other systems, permits
- 5 a motor vehicle to operate without the active control and continuous
- 6 monitoring of a human operator. Motor vehicles with this
- 7 technology, referred to as "autonomous vehicles," offer significant
- 8 potential safety, mobility, and commercial benefits for individuals
- 9 and businesses in the state and elsewhere.
- 10 (b) Autonomous vehicles have been operated safely on public
- 11 roads in the state in recent years by entities developing and testing
- 12 this technology.
- 13 (c) The State of California, which presently does not prohibit
- 14 or specifically regulate the operation of autonomous vehicles,
- 15 desires to encourage the current and future development, testing,
- 16 and operation of autonomous vehicles on the public roads of the
- 17 state. The state seeks to avoid interrupting these activities while

1 at the same time creating appropriate rules intended to ensure that  
2 the testing and operation of autonomous vehicles in the state are  
3 conducted in a safe manner.

4 (d) Toward that end, the Legislature finds it appropriate to  
5 authorize the establishment of specific safety requirements for the  
6 testing and operation of autonomous vehicles, and to require that  
7 future testing and operation of autonomous vehicles in the state  
8 comply with those requirements.

9 SEC. 2. Division 16.6 (commencing with Section 38750) is  
10 added to the Vehicle Code, to read:

11  
12 DIVISION 16.6. AUTONOMOUS VEHICLES  
13

14 38750. (a) For purposes of this division, the following  
15 definitions apply:

16 (1) “Autonomous technology” means technology that has the  
17 capability to drive a vehicle without the active physical control or  
18 monitoring by a human operator.

19 (2) (A) “Autonomous vehicle” means any vehicle equipped  
20 with autonomous technology that has been integrated into that  
21 vehicle.

22 (B) An autonomous vehicle does not include a vehicle that is  
23 equipped with one or more collision avoidance systems, including,  
24 but not limited to, electronic blind spot assistance, automated  
25 emergency braking systems, park assist, adaptive cruise control,  
26 lane keep assist, lane departure warning, traffic jam and queuing  
27 assist, or other similar systems that enhance safety or provide driver  
28 assistance, but are not capable, collectively or singularly, of driving  
29 the vehicle without the active control or monitoring of a human  
30 operator.

31 (3) “*Department*” means the *Department of Motor Vehicles*.

32 ~~(3)~~

33 (4) An “operator” of an autonomous vehicle is the person who  
34 is seated in the driver’s seat, or if there is no person in the driver’s  
35 seat, causes the autonomous technology to engage.

36 ~~(4)~~

37 (5) A “manufacturer” of autonomous technology is the person  
38 as defined in Section 470 that originally manufactures a vehicle  
39 and equips autonomous technology on the originally completed  
40 vehicle or, in the case of a vehicle not originally equipped with

1 autonomous technology by the vehicle manufacturer, the person  
2 that modifies the vehicle by installing autonomous technology to  
3 convert it to an autonomous vehicle after the vehicle was originally  
4 manufactured.

5 (b) An autonomous vehicle may be operated on public roads  
6 *for testing purposes* by a driver who possesses the proper class of  
7 license for the type of vehicle being operated ~~if either of the~~  
8 ~~following applies~~ *all of the following requirements are met:*

9 (1) The autonomous vehicle is being operated on roads in this  
10 state solely by employees, contractors, or other persons designated  
11 by the manufacturer of the autonomous ~~technology for testing~~  
12 ~~purposes. The technology.~~

13 (2) *The* driver shall be seated in the driver's seat, monitoring  
14 the safe operation of the autonomous vehicle, and capable of taking  
15 over immediate manual control of the autonomous vehicle in the  
16 event of an autonomous technology failure or other emergency.  
17 ~~Prior~~

18 (3) *Prior* to the start of testing in this state, the ~~person~~  
19 ~~manufacturer~~ performing the testing shall obtain an instrument  
20 of insurance, surety bond, or proof of self-insurance ~~as specified~~  
21 ~~in regulations adopted by the Department of Motor Vehicles~~  
22 ~~pursuant to paragraph (1) of subdivision (d), in the amount of five~~  
23 ~~million dollars (\$5,000,000).~~

24 ~~(2) The manufacturer of the autonomous technology provides~~  
25 ~~all of the following: in the amount of five million dollars~~  
26 ~~(\$5,000,000), and shall provide evidence of the insurance, surety~~  
27 ~~bond, or self-insurance to the department in the form and manner~~  
28 ~~required by the department pursuant to the regulations adopted~~  
29 ~~pursuant to subdivision (d).~~

30 (c) *Except as provided in subdivision (b), an autonomous vehicle*  
31 *shall not be operated on public roads until the manufacturer*  
32 *submits an application to the department, and that application is*  
33 *approved by the department pursuant to the regulations adopted*  
34 *pursuant to subdivision (d). The application shall contain, at a*  
35 *minimum, all of the following certifications:*

36 (1) *A certification by the manufacturer that the autonomous*  
37 *technology satisfies all of the following requirements:*

38 (A) The autonomous vehicle has a mechanism to engage and  
39 disengage the autonomous technology that is easily accessible to  
40 the operator.

1 (B) The autonomous vehicle has a visual indicator inside the  
2 cabin to indicate when the autonomous technology is engaged.

3 (C) The autonomous vehicle has a system to safely alert the  
4 operator if an autonomous technology failure is detected while the  
5 autonomous technology is engaged, and when an alert is given,  
6 the system shall do either of the following:

7 (i) Require the operator to take control of the autonomous  
8 vehicle.

9 (ii) If the operator does not or is unable to take control of the  
10 autonomous vehicle, the autonomous vehicle shall be capable of  
11 coming to a complete stop.

12 (D) The autonomous vehicle shall allow the operator to take  
13 control in multiple manners, including, without limitation, through  
14 the use of the brake, the accelerator pedal, or the steering wheel,  
15 and it shall alert the operator that the autonomous technology has  
16 been disengaged.

17 (E) The autonomous vehicle's autonomous technology meets  
18 Federal Motor Vehicle Safety Standards for the vehicle's model  
19 year and all other applicable safety standards and performance  
20 requirements set forth in state and federal law and the regulations  
21 promulgated pursuant to those laws.

22 (F) The autonomous technology does not make inoperative any  
23 Federal Motor Vehicle Safety Standards for the vehicle's model  
24 year and all other applicable safety standards and performance  
25 requirements set forth in state and federal law and the regulations  
26 promulgated pursuant to those laws.

27 (G) The autonomous vehicle has a separate mechanism, in  
28 addition to, and separate from, any other mechanism required by  
29 law, to capture and store the autonomous technology sensor data  
30 for at least 30 seconds before a collision occurs between the  
31 autonomous vehicle and another vehicle, object, or natural person  
32 while the vehicle is operating in autonomous mode. The  
33 autonomous technology sensor data shall be captured and stored  
34 in a read-only format by the mechanism so that the data is retained  
35 until extracted from the mechanism by an external device capable  
36 of downloading and storing the data. The data shall be preserved  
37 for three years after the date of the collision.

38 ~~(e) Except as provided in paragraph (1) of subdivision (b), an~~  
39 ~~autonomous vehicle may not be operated on public roads unless~~

1 the manufacturer first submits an application to the Department  
2 of Motor Vehicles that contains, at a minimum, all of the following:

3 (1) ~~A certification by the manufacturer that the autonomous~~  
4 ~~technology meets all of the requirements of paragraph (2) of~~  
5 ~~subdivision (b):~~

6 (2) A certification that the manufacturer has tested the  
7 autonomous technology on public roads and has complied with  
8 the testing standards, if any, established by the ~~Department of~~  
9 ~~Motor Vehicles department~~ pursuant to ~~paragraph (1) of~~  
10 ~~subdivision (d).~~

11 (3) A certification that the manufacturer will maintain a surety  
12 bond, or proof of self-insurance as specified in regulations adopted  
13 by the ~~Department of Motor Vehicles department~~ pursuant to  
14 ~~paragraph (1) of subdivision (d), in an amount of five million~~  
15 ~~dollars (\$5,000,000).~~

16 (d) ~~Prior to (1) As soon as practicable, but no later than~~  
17 ~~January 1, 2014 2015, the Department of Motor Vehicles~~  
18 ~~department shall adopt regulations setting forth requirements for~~  
19 ~~the submission and approval of an application to operate an~~  
20 ~~autonomous vehicle pursuant to this division and shall hold public~~  
21 ~~hearings on the adoption of any regulation applicable to the~~  
22 ~~operation of an autonomous vehicle without the presence of a~~  
23 ~~driver inside the vehicle. The regulations shall include any testing~~  
24 ~~standards, in addition to those established by paragraph (1) of~~  
25 ~~subdivision (b), developed by the Department of the California~~  
26 ~~Highway Patrol (CHP), the Institute of Transportation Studies at~~  
27 ~~the University of California, or any other entity chosen by the~~  
28 ~~department that has expertise in automotive technology, automotive~~  
29 ~~safety, and autonomous system design that the department approves~~  
30 ~~and concludes are necessary to ensure the safe operation of~~  
31 ~~autonomous vehicles on public roads. The department may~~  
32 ~~establish additional requirements by the adoption of regulations,~~  
33 ~~which it determines, in consultation with the CHP, are necessary~~  
34 ~~to ensure the safe operation of autonomous vehicles on public~~  
35 ~~roads, including regulations regarding the number of deployments~~  
36 ~~of autonomous vehicles on public roads. of evidence of insurance,~~  
37 ~~surety bond, or self-insurance required by subdivision (b), and the~~  
38 ~~submission and approval of an application to operate an~~  
39 ~~autonomous vehicle pursuant to subdivision (c).~~

1     (2) *The regulations shall include any testing, equipment, and*  
2 *performance standards, in addition to those established for*  
3 *purposes of subdivision (b), that the department concludes are*  
4 *necessary to ensure the safe operation of autonomous vehicles on*  
5 *public roads, with or without the presence of a driver inside the*  
6 *vehicle. In developing these regulations, the department may*  
7 *consult with the Department of the California Highway Patrol,*  
8 *the Institute of Transportation Studies at the University of*  
9 *California, or any other entity identified by the department that*  
10 *has expertise in automotive technology, automotive safety, and*  
11 *autonomous system design.*

12     (3) *The department may establish additional requirements by*  
13 *the adoption of regulations, which it determines, in consultation*  
14 *with the Department of the California Highway Patrol, are*  
15 *necessary to ensure the safe operation of autonomous vehicles on*  
16 *public roads, including, but not limited to, regulations regarding*  
17 *the aggregate number of deployments of autonomous vehicles on*  
18 *public roads, special rules for the registration of autonomous*  
19 *vehicles, new license requirements for operators of autonomous*  
20 *vehicles, and rules for revocation, suspension, or denial of any*  
21 *license or any approval issued pursuant to this division.*

22     (4) *The department shall hold public hearings on the adoption*  
23 *of any regulation applicable to the operation of an autonomous*  
24 *vehicle without the presence of a driver inside the vehicle.*

25     ~~(e) (1) The Department of Motor Vehicles department shall~~  
26 ~~approve an application submitted by a manufacturer pursuant to~~  
27 ~~subdivision (c) upon verification that the manufacturer has~~  
28 ~~submitted test results demonstrating if it finds that the applicant~~  
29 ~~has submitted all information and completed testing necessary to~~  
30 ~~satisfy the department that the autonomous vehicles are safe to~~  
31 ~~operate on public roads and the applicant has complied with all~~  
32 ~~requirements specified in the regulations adopted by the~~  
33 ~~department pursuant to subdivision (d). Notwithstanding the~~  
34 ~~foregoing~~

35     (2) *Notwithstanding paragraph (1), if the application seeks*  
36 *approval for autonomous vehicles capable of operating without*  
37 *the presence of a driver inside the vehicle, the department may*  
38 *impose additional requirements it deems necessary to ensure the*  
39 *safe operation of those vehicles, and may require the presence of*  
40 *a driver in the driver's seat of the vehicle if it determines, based*



1 on its review of the testing conducted by the manufacturer pursuant  
2 to paragraph (1), that such a requirement is necessary to ensure  
3 the safe operation of those vehicles on public roads. The  
4 ~~Department of Motor Vehicles~~ department shall notify the  
5 Legislature of the receipt of an application from a manufacturer  
6 seeking approval to operate an autonomous vehicle capable of  
7 operating without the presence of a driver inside the vehicle and  
8 approval of the application. Approval of the application shall be  
9 effective no sooner than 180 days after the date the application is  
10 submitted.

11 (f) Nothing in this division shall limit or expand the existing  
12 authority to operate autonomous vehicles on public roads, until  
13 120 days after the ~~Department of Motor Vehicles~~ department  
14 adopts the regulations ~~authorized~~ required by this subdivision  
15 paragraph (1) of subdivision (d).

16 (g) Federal regulations promulgated by the National Highway  
17 Traffic Safety Administration shall supersede the provisions of  
18 this division when found to be in conflict with any other state law  
19 or regulation.

20 (h) The manufacturer of the autonomous technology installed  
21 on a vehicle shall provide a written disclosure to the purchaser of  
22 an autonomous vehicle that describes what information is collected  
23 by the autonomous technology equipped on the vehicle. The  
24 ~~Department of Motor Vehicles~~ department may promulgate  
25 regulations to assess a fee upon a manufacturer that submits an  
26 application pursuant to subdivision (c) to operate autonomous  
27 vehicles on public roads in an amount necessary to recover all  
28 costs reasonably incurred by the department.